

## Tor Coatings Ltd

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## Agrément Certificate

07/4485

Product Sheet 1

### TOR LIQUID ROOF COATINGS

#### ELASTASEAL SYSTEM 25

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Elastaseal System 25, a liquid-applied, reinforced polyurethane membrane roof waterproofing system, for use on flat or sloping roofs with limited access.

(1) Hereinafter referred to as 'Certificate'.

#### CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



#### KEY FACTORS ASSESSED

**Weathertightness** — the system will resist the passage of moisture into the building (see section 6).

**Properties in relation to fire** — the use of the system can enable a roof to be unrestricted under the current Building Regulations (see section 7).

**Adhesion** — the adhesion of the system is sufficient to resist the effects of any likely wind suction acting on the roof (see section 8).

**Resistance to mechanical damage** — the system will accept, without damage, the limited foot traffic and loads associated with the installation and maintenance, and the effects of thermal or other minor movement likely to occur in practice (see section 9).

**Durability** — under normal service conditions the system will provide a durable roof waterproofing with a service life of up to 25 years (see section 11).

The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agreement

Date of Second issue: 7 October 2015

John Albon — Head of Approvals  
Construction Products

Originally certificated on 28 November 2007

Claire Curtis-Thomas  
Chief Executive

The BBA is a UKAS accredited certification body — Number 113.

The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at [www.bbacerts.co.uk](http://www.bbacerts.co.uk)

#### British Board of Agrément

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## Regulations

In the opinion of the BBA, Elastaseal System 25, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



### The Building Regulations 2010 (England and Wales) (as amended)

<b>Requirement:</b>	<b>B4(2)</b>	<b>External fire spread</b>
Comment:	On suitable substructures the use of the system will enable a roof to be unrestricted under this Requirement. See section 7 of this Certificate.	
<b>Requirement:</b>	<b>C2(b)</b>	<b>Resistance to moisture</b>
Comment:	Tests for water resistance on the system indicates that it meets this Requirement. See section 6.1 of this Certificate.	
<b>Regulation:</b>	<b>7</b>	<b>Materials and workmanship</b>
Comment:	The system comprises acceptable materials. See section 11 and the <i>Installation</i> part of this Certificate.	



### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)(2)</b>	<b>Durability, workmanship and fitness of materials</b>
Comment:	The system can contribute to a construction meeting this Regulation. See sections 10 and 11 and the <i>Installation</i> part of this Certificate.	
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	<b>2.8</b>	Spread from neighbouring buildings
Comment:	The system, when applied to a non-combustible substrate, is regarded as having low vulnerability under clause 2.8.1 <sup>(1)(2)</sup> of this Standard. See section 7 of this Certificate.	
Standard:	<b>3.10</b>	Precipitation
Comment:	Tests for water resistance indicate that use of the system will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1 <sup>(1)(2)</sup> and 3.10.7 <sup>(1)(2)</sup> . See section 6.1 of this Certificate.	
Standard:	<b>7.1(a)</b>	Statement of sustainability
Comment:	The system can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.	
<b>Regulation:</b>	<b>12</b>	<b>Building standards applicable to conversions</b>
Comment:	Comments in relation to the system under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .	

(1) Technical Handbook (Domestic)  
(2) Technical Handbook (Non-Domestic).



### The Building Regulations (Northern Ireland) 2012 (as amended)

<b>Regulation:</b>	<b>23(a)</b>	<b>Fitness of materials and workmanship</b>
Comment:	<b>(b)(i)</b>	The system comprises acceptable materials. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>28(b)</b>	<b>Resistance to moisture and weather</b>
Comment:	The system will enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.	

<b>Regulation:</b>	<b>36(b)</b>	<b>External fire spread</b>
<b>Comment:</b>	On suitable substructures the use of the system will enable a roof to be unrestricted under the requirements of this Regulation. See section 7 of this Certificate.	

## Construction (Design and Management) Regulations 2015

### Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, Principal Designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See sections: 3 *Delivery and site handling* (3.2) and 13 *Precautions* of this Certificate.

## Additional Information

### NHBC Standards 2014

NHBC accepts the use of Elastaseal System 25, provided it is installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Part 7 *Roofs*, Chapter 7.1 *Flat roofs and balconies*.

## Technical Specification

### 1 Description

1.1 Elastaseal 25 is a cold liquid-applied polyurethane membrane, reinforced with an embedded glassfibre matting.

1.2 The system is applied by brush, roller or airless spray to provide a waterproofing layer with a minimum coating thickness of 1.7 mm.

1.3 The system is built up by applying the following components on site:

- Torcure MC binder/sealer – a single-component stabiliser and primer for use on concrete, mastic asphalt and bituminous felt substrates prior to the application of Elastaseal embedment coating
- Elastaseal Embedment coat – a one-component liquid applied polyurethane coating that cures to form an elastomeric waterproofing membrane
- Elastamat regular glassfibre matting – a chopped strand glass mat with a nominal weight per unit area of 100 g·m<sup>-2</sup> for setting into the Elastaseal embedment coating for reinforcement
- Elastaseal Top coat – a one-component liquid-applied coating, based on polyurethane technology, which cures to form an elastomeric waterproofing and UV-resistant coating. It is available in White, Dove Grey, Slate Grey, Verdigris and Rustic Red colours.

1.4 Other materials available for use with the system include:

- Torcure MC bonding primer – a one-component primer for use on plastic, eg PVF<sub>2</sub>, polyester/acrylic coatings and GRP
- Torcure MC Metallic primer – a one-component anti-corrosive primer for use on steel
- Torkill fungicidal solution W – a biocidal wash for use on masonry against mould, fungi and moss
- Elastaseal Fibretex – a one-component liquid-applied polyurethane containing reinforcing fibres
- Tor Solvent TH99 – a xylene/methyl propoxol acetate for cleaning equipment and for use as a solvent wipe to reactivate existing coating during repairs.

### 2 Manufacture

2.1 The liquid components of the system are manufactured by a batch-blending process.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken

- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control being operated by the manufacturer are being maintained.

2.3 The management system of Tor Coatings Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by SGS (Certificate Nos GB04/63409).

### 3 Delivery and site handling

3.1 The liquid components of the system are delivered to site in sealed containers labelled with the manufacturer's name, product description and the appropriate hazard and risk labels. They are available in the pack sizes given in Table 1.

3.2 All containers should be stored under cover in a cool, dry and ventilated place away from other chemicals and protected from frost. Components kept in sealed unopened containers and stored in accordance with the manufacturer's instructions will have a shelf-life as detailed in Table 1.

*Table 1 Pack weights and storage lives*

Component	Pack size (litres)	Pack weight (kg)	Storage life (months)
Torcure MC binder/sealer	5	5.4	12
Elastaseal Embedment coat	12.5	17.5	6
Elastaseal Top coat	12.5	19.2	6
Torcure MC bonding primer	5	6.9	6
Torcure MC Metallic primer	5	5.9	12
Elastaseal Fibretex	5 and 12.5	7.4 and 19.0	6
Torkill fungicidal solution W	5	5.3	60
Tor Solvent TH99	5	5	indefinite

3.3 The Elastaseal regular glassfibre mat is delivered to site in rolls with the following nominal dimensions and weight:

Length (m)      200  
 Width (cm)      100  
 Roll weight (kg) 21.

3.4 The Certificate holder has taken the responsibility of classifying and labelling the system under the *CLP Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheets.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Elastaseal System 25.

### Design Considerations

#### 4 General

4.1 Elastaseal System 25 is satisfactory for use as a waterproofing layer on flat or sloping roofs, for new work or for repairing or maintaining the waterproof layer of existing structurally sound roofs with limited access.

4.2 Installation must be carried out only by contractors trained and approved by the Certificate holder. Details of these are available from the Certificate holder.

4.3 When designing flat roofs, twice the minimum finished fall should be assumed, unless a detailed analysis of the

roof is available, including overall and local deflection and direction of falls etc. Flat roofs are defined as those having a minimum finished fall of 1:80. Pitched roofs are defined as those having falls in excess of 1:6.

4.4 Decks to which the system is to be applied must comply with the relevant requirements of BS 6629 : 2003, BS 8217 : 2005 or, where appropriate, *NHBC Standards* 2014, Chapter 7.1.

4.5 Limited access roofs are defined for the purpose of this Certificate as those subjected only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters etc.

4.6 The system can be used on the following substrates:

- concrete<sup>(1)</sup>
- mastic asphalt (roofing grade)<sup>(1)(2)</sup>
- roofing felt<sup>(1)(2)</sup>.

(1) Primed with Torcure MC binder/sealer.

(2) Owing to the variable nature of these materials, acceptable adhesion should be confirmed by test.

## 5 Practicability of installation

The system should only be installed by contractors who have been trained and approved by the Certificate holder.

## 6 Weathertightness



6.1 Elastaseal System 25 will adequately resist the passage of moisture to the inside of the building and so meet the requirements of national Building Regulations.

6.2 The system will maintain its integrity as a watertight coating under normal conditions of exposure and can accept, without damage, minor movements of the substrate.

## 7 Properties in relation to fire



7.1 When tested in accordance with BS 476-3 : 2004 the system, applied to a substructure comprising a 6 mm calcium silicate board and two layers of a 2 mm thick bituminous felt, achieved an EXT.F.AA rating.

7.2 The designation of other specifications (eg on combustible substrates and sloping surfaces) should be confirmed by:

**England and Wales** – test or assessment in accordance with Approved Document B, Appendix A, clause A1

**Scotland** – test to conform to Mandatory Standard 2.8, clause 2.8.1<sup>(1)(2)</sup>

(1) Technical Handbook (Domestic)

(2) Technical Handbook (Non-Domestic)

**Northern Ireland** – test or assessment by a UKAS-accredited laboratory, or an independent consultant with appropriate experience.

## 8 Adhesion

The adhesion of the system to the substrates listed in section 4.6 is sufficient to resist the effects of any wind suction, elevated temperature, thermal shock or structural movement likely to occur in practice. Acceptable adhesion to other substrates should be confirmed by test.

## 9 Resistance to mechanical damage

9.1 The system can accept, without damage, the limited foot traffic and light concentrated loads associated with installation and maintenance. Reasonable care is required, however, to avoid puncture by sharp objects.

9.2 Suitable footwear should be worn on the roof and any equipment carried onto the roof should be placed on suitable protection to prevent damage to the system.

## 10 Maintenance



10.1 Roofs should be inspected bi-annually, in autumn after leaf fall and in the spring, to ensure that vegetation and other debris from the roof and drainage outlets are cleared.

10.2 Washing of the membrane may be carried out using mild detergent, water and a soft brush. Strong alkali solutions, eg caustic soda or bleach, must not be used.

10.3 In the event of contamination of the system by chemicals, oils and greases, the advice of the Certificate holder should be sought.

## 11 Durability



Elastaseal System 25 has been used in the UK since 2000 and has performed satisfactorily. Accelerated weathering tests confirm that satisfactory retention of physical properties is achieved, and that with adequate maintenance and repair the system would be expected to have a service life of up to 25 years.

## Installation

### 12 General

12.1 Elastaseal System 25 must be applied in accordance with the Certificate holder's instructions. Work must not be carried out if rain is imminent, and the temperature at a time of laying must be between 5°C and 40°C.

12.2 Substrates to which the system is to be applied must be dry, clean and free from loose particles, fungal growth, paint, grease, oil or other contaminants which may affect the adhesion. The Certificate holder's advice should be sought for suitable cleaning procedures and the use of Torkill fungicidal solution W.

12.3 Previously-coated areas must be checked for integrity and adequate adhesion to the substrate.

12.4 Defects in the substrate, eg cracks, should be suitably repaired prior to application, in accordance with the Certificate holder's instructions.

12.5 A bond-breaking tape should be used either side of active cracks or joints. The Certificate holder should be consulted for details.

12.6 The substrate should be prepared and primed in accordance with the Certificate holder's instructions (see section 4.6). Adhesion checks should be carried out to ensure that the system is fully compatible with the existing surfaces and to determine the necessity for a primer.

12.7 All equipment should be cleaned after use with Tor Solvent TH99.

### 13 Precautions

13.1 Vapours from components of the system may cause sensitisation and irritation to the respiratory system, eyes and skin. The system should be used only in areas with sufficient ventilation to prevent the build-up of vapours. Contact with the skin, eyes and clothes must be avoided. The Certificate holder's material safety data sheets must be consulted for detailed information on the safe handling and use of the system components.

13.2 The system components must not be allowed to get into the waste drainage system.

## 14 Procedure

14.1 One coat of Elastaseal Fibretex should be applied to all upstands, plinths, hard edges or any other vulnerable details at a coverage rate of 1 m<sup>2</sup> per litre and allowed to dry firm.

14.2 A coat of Elastaseal Embedment coat is applied by brush, roller or airless spray to the clean prepared substrate at a minimum application rate of 0.75 litres per m<sup>2</sup>.

14.3 Elastamat regular fibreglass matting is laid and embedded into the wet coating using a brush or roller until fully saturated, allowing at least a 50 mm overlap over adjacent areas and ensuring that sufficient embedment material is applied to these areas.

14.4 At this point a check should be made to ensure that sufficient embedment material has been applied by noting areas of exposed matting or pinholing. If necessary, additional coating material may be applied to correct any visible faults and to ensure that there are no tented areas.

14.5 When the coating is dry, a check should be made for any upstanding glassfibre strands. These should be cut flush with the surface using a sharp knife, overcoated with Elastaseal Embedment coat and allowed to dry.

14.6 Two coats of Elastaseal Top coat are applied by brush, roller or airless spray at a minimum application rate of 0.63 litres per m<sup>2</sup>, allowing the first coat to dry before applying the second. It is recommended that different-coloured top coats are applied to allow easier monitoring of the application of the second coat.

14.7 A check should be made for the presence of pinholes and missed areas. These should be rectified by applying additional coating as necessary.

14.8 If additional slip resistance is required, an extra coat of Elastaseal Top coat should be applied at a minimum coverage rate of 0.25 litres per m<sup>2</sup> and, while wet, broadcast with a suitable anti-slip grit. The Certificate holder should be consulted for suitable grit and broadcast rates.

## 15 Repair

15.1 Any damage to the system must be repaired as soon as possible to ensure that the waterproofing integrity is maintained.

15.2 The system can be repaired by cutting back the damaged or debonded coating to sound, well-bonded material and reinstating it to the original specification, ensuring an overlap of at least 50 mm onto the existing coating.

15.3 Overlapped areas on the existing coating must be cleaned using Tor Solvent TH99 prior to overcoating.

15.4 If repairs to the substrate are required, the Certificate holder's advice should be sought for suitable methods.

15.5 On completion, and when the coating has fully cured, the repair should be inspected to ensure that it is sound and well bonded to the existing coating.

## Technical Investigations

## 16 Tests

16.1 Tests were conducted on specimens of Elastaseal System 25 as prepared by the Certificate holder, and the results assessed as being satisfactory, in relation to:

- water absorption
- water vapour permeability
- water vapour resistance
- tensile strength and elongation
- resistance to heat ageing at 80°C for 100 days
- resistance to heat ageing at 70°C for 200 days

- resistance to UV ageing at 1000 MJ·m<sup>-2</sup>
- exposure to surface water at 60°C for 60 days
- low temperature flexibility
- tensile bond strength
- resistance to fatigue cycling
- resistance to cracking at -10°C
- resistance to dynamic impact
- resistance to static indentation
- slip resistance (coefficient of friction).

16.2 Additional characterisation tests were carried out on the system and its component parts, the results of which were satisfactory for these types of systems, in relation to:

- density
- ash content
- volatile content
- weight per unit area.

## 17 Investigations

17.1 An assessment was made of independent fire test reports relating to the system's performance in respect of spread of flame and fire penetration.

17.2 Visits were made to existing sites in the UK to assess the in-service performance of the system.

17.3 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

## Bibliography

BS 476-3 : 2004 *Fire tests on building materials and structures — Classification and method of test for external fire exposure to roofs*

BS 6229 : 2003 *Flat roofs with continuously supported coverings — Code of practice*

BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*



### 18 Conditions

#### 18.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

18.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

18.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

18.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

18.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

22.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.